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10/044,192	10/26/2001	Sandip Sarkar	PA990359C1	1885

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Qualcomm Incorporated
Patents Department
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EXAMINER
PIZARRO, RICARDO M

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/044,192	SARKAR, SANDIP
	Examiner	Art Unit	
	Ricardo Pizarro	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 October 2001</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-27</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-8,10-17,21,24,26 and 27</u> is/are rejected.

7)☒ Claim(s) <u>9,18-20,22,23 and 25</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>26 October 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 2-4, 6, 9, 10, 13, 16-24, and 26 are objected to because of the following

informalities, for purposes of better reading of the claims , it is suggested to

applicant

In claim 2 line 2 delete the second occurrence of "the".

In claim 3 line 1 delete "said".

In claim 4 line 2 delete "said".

 In claim 6 line 1 replace "1" with –5-.

In claim 9 line 6 delete "the".

In claim 10 line 1 replace "8" with –9-.

In claim 13 1 replace "11" with –12-.

In claim 16 line 1 replace "14" with –15-.

In claim 17 line 1 replace "1" with –15- .

In claim 18 line 1 replace'1" with –15- and "the slot" with -a slot-.

In claim 19 in line 1 replace '1" with –15- in line 3 delete "said".

In claim 20 line 1 replace "1" with –15- and "said matched filter" with –a matched filter-,

delete the second occurrence of "said", in line 2 delete "said".

In claim 21 line 3 delete " , ", and replace "the selected portion" with – a selected

portion-.

In claim 22 line 1 replace "said secondary" with -a secondary-, in line 3 replace "the

first " with –a first-.

In claim 23 line 1 replace "21" with –22-.

In claim 24 line 1 insert "a": before –pilot-, in line 2 delete "the".

In claim 26 line 1 replace " a pilot" with –said pilot-.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

> (a) the invention was known or used by others in this country, or patented or described in a printed
> publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1- 8, 11, 17-21, 27 are rejected under 35 U.S.C. 102(a) as being anticipated

by Admitted prior art.

Prior Art (Fig. 3) discloses a method for receiving a signal, the method comprising:

sampling the received signal to produce a stream of received samples (receiver 11

samples the received signal and provides samples to detector, Page 4 lines 1-3) , the

stream of received samples comprising a first set of received samples   followed by a

second set of received samples (PSC and SSC samples) ; correlating said first set of

received samples with a primary synchronization code to form a first slot timing

estimate (Correlation takes place at correlator 15 in Fig. 3) ; generating a second slot

timing estimate based at least in part on said second set of received samples

(multiplexer 31 provides the first samples of each slot to each one of the 16 SSC

detectors 18 in Fig. 3 to obtain a second timing estimate, Page 5 lines 19-23); and

decoding a secondary synchronization code word based on said first slot timing

estimate (said decoding of the first SSC code word value corresponding to first SSC

detector 18A - of the plurality of SSC detectors 18 in Fig. 3- based on first PSC value

from PSC detector 12 taking place at the SSC decoder 24 in Fig. 3) , said second slot

timing estimate and said second set of received samples (said decoding of the second

timing estimate and the second set of received samples that are the SSC samples

taking place at SSS decoder 24 in Fig. 3, page 6 lines 11-16), as in claims 1 and 27;

wherein said decoding comprises testing the validity of said first slot timing estimate

based on said generating (by comparing code in Decode unit 24 in Fig. 3, page 6

lines 11-16), as in claim 2; wherein testing comprises comparing said first slot timing

estimate with said second slot timing estimate (page 6 lines 11-16), as in claim 3;

determining a validity of said secondary synchronization code word based on

testing(page 6 lines 11-16) , as in claim 4; accumulating said first set of received

samples over a number of slot periods (accumulation of first samples takes place at

slot buffer 14 in Fig. 3, page 4 lines 16-17) , as in claim 5; said integer number of slot

periods is equal to an integer multiple of a number of slot periods in a frame period (16

element code word, page 6 line 9-10) , as in claim 6; wherein said integer multiple is

greater than one (16 greater that one) , as in claim 7; wherein accumulating is

performed over a period longer than one frame, as in claim 8; wherein said decoding

comprises measuring a correlation between each of a predetermined set of secondary

synchronization code words and a predetermined portion of said second set of received

samples (page 7 lines 11-16) , as in claim 11; wherein said predetermined number is

equal to an integer multiple of a number of samples in a slot, as in claim 17; wherein

said secondary synchronization code detector comprises a secondary synchronization

-code- sample buffer for accumulating, the selected portion (SSC buffer portion 21 in

SSC detector 18 in Fig. 3) , as in claim 21;

3. Claims 14-16 are rejected under 35 U.S.C. 102(a) as being anticipated by Admitted

    prior art.

An apparatus for receiving a signal comprising: sampler for sampling a -received signal

to produce a stream of received samples(receiver 11 samples the received signal and

provides samples to detector, Page 4 lines 1-3), the -stream of received samples

comprising a first set of received samples followed by a second set of received

samples(PSC and SSC samples) ; primary synchronization code detector for

accumulating the stream of received samples (that takes place at PDC slot buffer in

Fig. 3)   forming a first slot timing estimate based on the first set of received samples

(first timing estimate is a PSC estimate, page 5 lines 3-8) , forming a second slot timing

estimate based at least in part on the second set of received samples (multiplexer 31

provides the first samples of each slot to each one of the 16 SSC detectors 18 in Fig. 3,

detector 18A providing second timing estimate (SSC) and so on, Page 5 lines 19-23) ,

and testing a validity of the first slot timing estimate based on said first and second slot

timing estimates generating (by comparing code in Decode unit 24 in Fig. 3, page 6

lines 11-16); and secondary synchronization code detector for decoding a -first

secondary synchronization code word based on a selected portion of the second set of

received samples and said validity of the first slot timing estimate (SSC detector portion

18 in Fig. 3) , wherein the selected portion is selected based on the first slot timing

estimate, and wherein the decoding produces a frame timing estimate (taking place at

Max. Detector 29 in page 3 that produces the frame estimate, page 7 lines 18-21), as in

claim 14; wherein said primary synchronization code detector comprises a slot buffer

for accumulating received samples into a predetermined number of sample bins (PSC

slot buffer 14 in Fig 3) , as in claim 15; wherein said predetermined number is equal to

a number of samples in a single slot (page 4 lines 12-16) , as in claim 16 .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
>
> or described as set forth in section 102 of this title, if the differences between the
>
> subject matter sought to be patented and the prior art are such that the subject
>
> matter as a whole would have been obvious at the time the invention was made
>
> to a person having ordinary skill in the art to which said subject matter pertains.
>
> Patentability shall not be negatived by the manner in which the invention was
>
> made.

4. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

    Admitted prior art in view of Sriram .

The prior art did not specifically disclose wherein said measuring utilizes a soft decision

block decoding technique, as in claim 12; wherein said soft decision block decoding

technique utilizes the Chase algorithm, as in claim 13

US patent No. 6,754, 251 (Sriram et al) discloses Spread Spectrum telephony with

accelerated code acquisition wherein measuring is performed using digital   matched

filtering (Background col 1 lines 28-30), as in claim 10; wherein said measuring utilizes

a soft decision block decoding technique (soft decision decoding, col 6 line 46) , as in

claim 12.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention that the Chase algorithm is well known in the art as a soft decoding method

(Col 20 lines 14-17 of Sriram under alternative embodiments) and to provide the soft

decoding system as disclosed by Sriram to the prior art with the motivation of obtaining

a larger order of diversity combining being employed thus reducing the amount of Perch

required to get an acceptable performance in the system.

5. Claims 10, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Admitted prior art in view of Wheatley.

Prior art did not specifically disclose wherein said measuring is performed using digital

matched filtering, as in claim 10; comprising a pilot detector for estimating a pilot

channel offset , as in claims 24 and 26.

Wheatley discloses signal measuring is performed using digital   matched filtering (col

65 lines 7-10), as in claim 10; an apparatus for Pilot search using a matched filter

comprising a pilot detector for estimating a pilot channel offset (col 6 lines 18-23) , as in

claims 24 and 26.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

of the invention to provide the pilot detector as disclosed by Wheatley to the prior art

with the motivation of obtaining a method using a matched filter in a communications system to search for and detect pilot signals generated by base stations.

Allowable Subject Matter

6. Claims 9, 18-20, 22-23, 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Please also notice objection to claims.

Conclusion

7. **Any response to this action should be mailed to:**

   Commissioner of Patents and Trademarks

   Washington, D.C. 20231

   or faxed to:

   (703) 872-9306

(for formal communications intended for entry, for informal or draft communications, please label "PROPOSED" or "DRAFT")

   Hand-delivered responses should be brought to 220 South 20th Street, Crystal Plaza Two, Lobby, Room 1B03, Arlington, Va 22202 (Customer Window).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Ricardo Pizarro** whose telephone number is (571) 272-3077. The examiner can normally be reached on Monday-Friday from 9:00 AM to 5:30 PM. The fax number for this Group is (703) 872-9306.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Kenneth Vanderpuye** can be reached on (571) 272-3078.

December 7, 2004

Ricardo M. Pizarro

KENNETH VANDERPUYE
PRIMARY EXAMINER